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EX PARTE OR LATE FILED

October 6, 2004

VIA UPS NEXT DAY AIR

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: **Ex Parte**
WC Docket No. 04-313; CC Docket Nos. 01-338, 96-98, and 98-147
Mayo/MiCRA/Bates White Economic Impairment Analysis
REDACTED—FOR PUBLIC INSPECTION

Dear Ms. Dortch:

On October 5, 2004, The KDW Group LLC filed in the above listed dockets a redacted version of the "Mayo/MiCRA/Bates White Economic Impairment Analysis" ("MMBWA") on behalf of the competitive local exchange carriers ("CLECs") listed in Footnote #2 of the analysis. Please find attached a redacted copy of the Mayo/MiCRA/Bates White Economic Impairment Analysis.

Yours truly,

Thomas Cohen
Principal

REDACTED—For Public Inspection

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	
Unbundled Network Elements	WC Docket No. 04-313
Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers	CC Docket No. 01-338

Mayo/MiCRA/Bates White Economic Impairment Analysis

October 4, 2004

Table of Contents

I. QUALIFICATIONS

(1) My name is John W. Mayo. My business address is Georgetown University, McDonough School of Business, 37th and O Streets, N.W., Washington, DC, 20057. I am Professor of Economics, Business and Public Policy in the McDonough School. I am also the Executive Director of the Center for Business and Public Policy in the McDonough School at Georgetown University. Prior to assuming my current responsibilities, I have held several positions in the McDonough school including Senior Associate Dean (1999-2001) and Dean (2002-2004).

(2) I hold a Ph.D. in economics from Washington University in St. Louis (1982), with a principal field of concentration in industrial organization, which includes the analysis of antitrust and regulation. I also hold both an M.A. (Washington University, 1979) and a B.A. (Hendrix College, Conway, Arkansas, 1977) in Economics. I have taught economics, business, and public policy courses at Washington University, the University of Tennessee, and Virginia Tech. Also, I have served as Chief Economist, Democratic Staff of the U.S. Senate Small Business Committee. Both my research and teaching have centered on the relationship of government and business, with particular emphasis on regulated industries.

(3) I have authored numerous articles and research monographs, and have written a comprehensive text entitled *Government and Business: The Economics of Antitrust and Regulation*, (with David L. Kaserman), The Dryden Press, 1995. I have also written a number of specialized articles on economic issues in the telecommunications industry. These articles, including discussions of competition and pricing in the telecommunications industry, appeared in academic journals such as the *RAND Journal of Economics, the Journal of Law and Economics, the Journal of Industrial Economics, the Journal of Regulatory Economics*, and the *Yale Journal on Regulation.*

(4) My name is Michael Pelcovits. I am a Principal of the consulting firm Microeconomic Consulting & Research Associates, Inc. ("MiCRA"), which specializes in the analysis of antitrust and regulatory economics. My business address is 1155 Connecticut Avenue, Washington, D.C. 20036. I joined MiCRA in October 2002. Prior to this, I was Vice President and Chief Economist at WorldCom. In this position, and in a similar position at

MCI prior to its merger with WorldCom, I was responsible for directing economic analysis of regulatory and antitrust matters, before federal, state, foreign, and international government agencies, legislative bodies, and courts. Prior to my employment at MCI, I was a founding principal of the consulting firm, Cornell, Pelcovits & Brenner. From 1979 to 1981, I was Senior Staff Economist in the Office of Plans and Policy, Federal Communications Commission. I have testified or appeared before the Federal Communications Commission, many state regulatory commissions, the Office of Telecommunications (Oftel) of the UK government, the European Commission, the Ministry of Telecommunications of Japan, and the Civil Aeronautics Board. I have lectured widely at universities and published several articles on telecommunications regulation and international economics. I hold a B.A. from the University of Rochester (*summa cum laude)* and a Ph.D. in Economics from the Massachusetts Institute of Technology, where I was a National Science Foundation fellow.

(5) My name is Chris Frentrup. I am an Economist at the consulting firm Microeconomic Consulting & Research Associates, Inc. ("MiCRA"), which specializes in the analysis of antitrust and regulatory economics. My business address is 1155 Connecticut Avenue, Washington, D.C. 20036. I joined MiCRA in December 2003. Prior to this, I was a Senior Economist at WorldCom. In this position, and in the same position at MCI prior to its merger with WorldCom, I provided economic analysis of regulatory matters before the Commission and state public utility commissions, including price cap regulation, universal service, and local competition. Prior to my employment at MCI, I was an Economist in what was then the Common Carrier Bureau of the Federal Communications Commission, from 1987 through 1994. In that position, I served on the task force that developed and implemented price cap regulation for AT&T and the local exchange carriers. I hold a B.A. from the University of Texas and a Ph.D. in Economics from the Texas A&M University.

(6) My name is Seth Sacher. I am a Principal with the consulting firm of Bates White, LLC. My business address is 2001 K Street, NW, Washington, DC 20006. I joined Bates White in 2003. Prior to that I was a Principal at Charles River Associates. Before joining Charles River Associates, I was a Staff Economist at the Federal Trade Commission. I have also held several other positions as a professional economist within government, universities, and the private sector. I am a specialist in applied industrial organization and antitrust and have extensive experience analyzing economic issues pertaining to competition, such as market

definition and the evaluation of entry conditions. I have worked on these issues in matters involving a broad spectrum of industries, including the telecommunications industry. I received a B.A. in Economics from the State University of New York at Binghamton and an M.A. and Ph.D. from the University of Maryland. I have published several articles in the areas of antitrust and applied microeconomic analysis.

II. INTRODUCTION AND SUMMARY

(7) On August 20, 2004, the Federal Communications Commission (Commission) issued an Order and Notice of Proposed Rulemaking (NPRM) in which it seeks comments on alternative unbundling rules necessitated by the *United States Telecom Association v. FCC* (USTA II) decision.[1] This paper, in response to the Commission's NPRM, offers a fresh perspective on the critical issues of the economics of unbundling and "impairment" with particular emphasis on its application to enterprise loops, transport, and dark fiber. [2]

(8) In this paper, we find the following:

- Eight years of experience under the Telecommunications Act have shown that unbundling and the related concept of impairment are not only the sources of considerable legal debate but, more importantly, have emerged as an economic linchpin issue for the emergence of competition.
- In this regard, the economic activities undertaken by new entrants that rely upon unbundled network elements are creating significant economic benefits for consumers in the United States, including the provision of new, innovative services, lower prices, greater choices, increased output, and downward cost pressures on incumbent providers of local exchange services.
- While creating a significant source of economic vitality to the market, these competitors also show significant vulnerabilities that, absent an appropriate impairment standard and unbundling policy, will put the emergence of competition and the attendant improvements in consumer welfare at risk.

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1 United States Telecom Association v. Federal Communications Commission, 359 F.3d 554 (2004) ("USTA II").

2 The coalition of sponsors for this study include AT&T; Blackfoot Telecommunications Group; Cavalier Telephone, LLC; Cbeyond Communications; Choice One Communications; CompTel/ASCENT; Conversent Communications; Covad Communications; DSL.net, Inc.; Eschelon Telecom, Inc.; FDN Communications; KMC Telecom; ITCDeltacom; Lightship Telecom; MCI; McLeodUSA; New Edge Networks; NuVox Communications; Oneeighty Communications; Pac-West Telecomm, Inc.; PAETEC Communications; Supra Telecommunications and Information Systems, Inc; TDS Metrocom; US LEC Corp.; U.S. TelePacific Corp.; XO Communications; and Xspedius Communications.

- The need to address the Court's concerns in USTA II does not require abandoning a policy of enabling competition, the "prime directive" embedded in the Telecommunications Act.
- While the court's actions may seem to create considerable uncertainty and create a desire to "go back to the drawing board," our review indicates that rather small, but entirely logical refinements in the concept of "impairment" can simultaneously address the court's criticism of the Triennial Review Order (TRO) impairment standard and advance the pro-competitive goals of the Telecommunications Act.
- After a full consideration of the issues raised by the USTA II case, the appropriate market within which to analyze the issue of impairment for enterprise loops and transport are, as the Commission has previously established, "customer by customer" and "route by route," respectively.
- While new competitors are eager to have the opportunity to compete, in virtually all cases they are currently impaired without unbundled access to DS-1 and DS3 loops/transport and dark fiber.
- The RBOCs have overstated the extent to which self-deployment of DS-1, DS3 and dark fiber loops and transport has occurred. Consequently, the RBOC's position that unbundling these elements is no longer necessary to further enable telecommunications competition is mistaken.
- Other possible means by which new entrants may conceivably secure the ability to provide service (e.g., intermodal provision by cable operators or special access) do not enable competition in the provision of wireline business services and, as such, cannot be said to remove the impairment of prospective entrants.

III. BACKGROUND AND OVERVIEW

(9) Only eight short years ago, the Telecommunications Act of 1996 was ushered in on a wave of optimism that the era of local exchange telephone monopoly was over. Politicians and industry pundits alike heralded the passage of the Act. Commissioner Susan Ness noted, "opportunities abound" for both industry and consumers as a consequence of the passage of the Act.3 Similarly, Commissioner Rachael Chong proclaimed that the new Act would "catapult this country right into the Information Age."[4] Vice President Gore enthusiastically proclaimed that the passage of the Act was tantamount to the fall of the Berlin Wall of the telecommunications industry. And former Senate Majority Leader Howard Baker asserted, "I can now confidently predict that the Telecommunications Act of 1996 ...will usher in an era of communications innovation that will shortly make our present arrangement seem as antiquated as the Guttenberg press."[5]

(10) Political hyperboles aside, there were several bona fide reasons for this enthusiasm. Indeed, the fundamental intent of the Act was to open all telecommunications markets to competition. That objective, in turn, seemed designed to spark the interests of entrepreneurs. After all, local exchange markets in the United States are amazingly large—well over $100 billion in annual revenues. In addition, at the time the Act was passed, the economy seemed to be headed into new territory with the emergence of e-commerce, which was founded on the Internet. The Internet, in turn, relies fundamentally on the telecommunications industry's infrastructure. Thus, at the time the Act was passed, conditions seemed ripe for a policy initiative to promote competition and, ultimately, the deregulation of the final stronghold of monopoly power in this industry.

(11) By now, however, the beachhead established by the competitive telecommunications industry has been littered with the bodies of numerous firms that have unsuccessfully attempted to

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3 Statement of Commissioner Susan Ness, February 23, 1996.

4 "A Camelot Moment—the Telecommunications Act of 1996." Comments of Commissioner Chong before the Federal Communications Bar Association, Midwest Chapter, Chicago, Illinois, February 15, 1996.

5 "We're Finally Catching up with Dick Tracy," by Howard Baker, Jr. Newsday, February 25, 1996.

enter local exchange markets.[6] It is, of course, difficult to untangle whether these failures are the consequence of poor business models, the bursting of the "dot-com bubble," a generally weak economy or monopoly-entrenching behavior of the RBOCs.[7] It is clear, however, that, given the generally nascent stage of competition in local exchange telecommunications markets today, the ultimate success or failure of the competitive seeds that are present to "take root" critically depends at this juncture on the ability of the Commission to "get it right" in enabling competition.[8]

(12) In Section V, we turn specifically to a discussion of the Commission's approach to impairment and how the standards adopted in the TRO can be modified to account for the USTA II decision. Before turning to the technical issue of impairment, however, it is important to see what, exactly, is at stake. Who are these new providers? What do they do? How do their activities play a role in advancing telecommunications competition and telecommunications investment?

(13) To gain insight into these questions, we sought information from the competitive local exchange carriers (CLECs) on their activities in the marketplace. While the Commission has gathered aggregate data on line counts, etc., we sought more nuanced information that, we found, reveals a picture of both vitality and vulnerability. The vitality of CLECs in the marketplace is palpable. At the same time, the vulnerability of these carriers to adverse decisions to enable competition fully is also abundantly apparent.

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6 See Table 1, *infra.*

7 For a more detailed discussion of this issue, see Mark Burton, David L. Kaserman, and John W. Mayo "Shakeout or Shakedown? The Rise and Fall of the CLEC Industry" in *Markets, Pricing, and Deregulation of Utilities*, Michael A. Crew and Joseph C. Schuh, Eds., Boston, Kluwer Academic Publishers, 2003.

8 Indeed, as discussed infra (Section V), the Supreme Court has provided a compelling "meta-message" regarding the competition-enabling goal of the Act.

IV. VITALITY AND VULNERABILITY OF THE CLECS

(14) While aggregate data portraying the nationwide or state-by-state footprint of new entrants into the telecommunications arena is useful, they fail in many ways to portray accurately the full vitality that new entrants are bringing to telecommunications markets. To gain a more complete ("granular") perspective, we conducted a series of interviews with a number of CLECs that rely upon the provision of unbundled network elements to provide retail telecommunications service.

(15) Interviews with twelve of the CLECs that are sponsors of this study were conducted during the period from September 20 through September 28, 2004.[9] The size and scope of the carriers vary widely. Their 2003 revenues ranged from $10 million to $869 million, with an average of $226 million. One entered in 1994, two in 1995, one in 1996 and 1997, five in 1998 and two in 1999. All offer web hosting and high-speed Internet services, 11 offer local and long distance voice services, nine offer dial-up Internet services, and eight offer pure data services.

(16) The results of these interviews are quite telling. Specifically, we found these new competitors are introducing innovative new services into the marketplace, are driving the market to reduce prices, and are increasing customer choices for services that formerly were the domain of a single monopoly provider. Moreover, the presence of these firms is forcing the incumbent Bell companies to innovate and increase investments that enable improved and superior customer performance. Importantly, all these benefits are being driven by firms that critically rely upon a regulatory framework that fully enables the emergence of competition, including access to network elements.

(17) While the CLECs have brought numerous benefits to the enterprise local exchange market, they are also highly vulnerable. While such vulnerability of specific new entrants—

[9] The parties we held discussions with are: **BEGIN PROPRIETARY END PROPRIETARY.**

individually—is to be expected, our assessment is that the entire competitive fringe is, at this point vulnerable. This vulnerability places at risk virtually all of the competitive benefits just identified in the event that the Commission does not fully embrace a competition-enabling policy.[10] In this section, we discuss both the vitality and vulnerability of the CLECs.

IV.1. Vitality of the CLECs

(18) The "value added" to society of the CLEC competitive fringe manifests itself in a number of ways. For instance, we found CLECs have often been the first firms in a given geographic region to offer new services that the marketplace finds attractive. For example, one company indicated that it was the first telecom provider to offer local service, including fully featured class 5 local voice and 911 services as well as long-distance voice services, and high speed Internet connectivity, over an Internet Protocol network.[11] The introduction of Internet Protocol network architecture and softswitching in the local exchange market has permitted local service providers to offer to small businesses affordable state of the art services that were previously only available to big businesses. This is due to the capabilities introduced by use of Internet Protocol vs existing circuit switched technology.

(19) Several CLECs similarly indicated they were the first in their service areas to offer broadband services to their customers.[12] Some indicated the incumbent local exchange carriers (ILECs) had essentially abandoned markets below the top tiers until their entry.[13] The broader evidence suggests that CLECs in general have engaged in a huge push to deploy broadband products, particularly in lower tier markets, and this has forced the ILECs to respond in kind. As noted by many interviewees, by bringing such services to lower tier markets, the presence of the CLECs not only has directly benefited the customers receiving

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10 We emphasize here an important distinction; namely that the Commission adopt policies to protect competition rather than one that protects any given competitor or competitors. Students of industrial organization routinely praise the former and condemn the latter.

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these services, but generally has made such areas more competitive in retaining and attracting businesses and employment.

(20) Several CLECs indicated that they were the first to offer integrated voice and data services over the same T1 lines.[14] Thus, within a T1 line, these products will dedicate a certain number of channels to voice and a certain number of channels to data. Prior to their entry into their respective market areas, incumbent producers, usually only the ILEC, would not split their T1s in this manner. These new CLEC products allowed customers to purchase fewer lines. Most of the CLECs indicated that after they introduced such products, the ILECs would usually follow suit.

(21) One CLEC indicated that it was the first in its marketing areas to offer what can best be depicted as the "next generation" of the integrated products described above.[15] Specifically, in a typical integrated loop, a certain number of channels are reserved for voice and a certain number are dedicated to data. This CLEC indicated it is offering a "dynamic bandwidth allocation" product. Thus, whereas the integrated products described above dedicate a certain number of channels to voice and a certain number of channels to data, this product allows data services to "borrow" any unused voice bandwidth when phone lines are idle (with voice services always given priority over data). This product has a number of advantages for customers. For example, for companies that sporadically use large data applications, it can reduce the number of lines they must purchase.

(22) Another CLEC indicated it offers customers unique remote data backup and recovery services.[16] This service automatically backs up customer information through their Internet or VPN connections. Information is backed up at a storage infrastructure located in the CLEC's collocation facility. The entire process is automated and obviates the need for staff to handle tapes or run backup jobs. Further, customers do not need to incur hardware or software costs to support their storage needs.

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(23) While some of the innovations the CLECs have brought to the market involve technologically sophisticated products, some of them simply involve new ways of selling existing products or improving customer service. For example, one CLEC indicated that it offers a unique product that allows customers to make changes, additions, and deletions to their accounts online.[17] Such offerings provide a degree of customer control designed to enhance consumer welfare. For example, this product allows users to log on to their account and customize the name that will show up on called parties' Caller ID display.

(24) Several CLECs indicated they were the first to offer bundled products or flat-rate calling plans.[18] Another indicated that because of its more efficient internal operation it is able to bring customers "on net" more quickly than the incumbent ILEC, even though it depends on ILEC elements to service customers.[19]

(25) Finally, several CLECs indicated their presence benefits consumers simply because many of their clients feel their service is more personalized than that offered by the Bells.[20] While such claims are difficult to quantify, and all businesses certainly champion the superiority of their customer service, there are several compelling reasons to give credibility to the CLECs' customer service assertions. Among these, the behemoth size and scope of the ILECs tend to create generalized "solutions" for their customers while CLECs are able to zero in on "niche" markets and needs, thereby fine tuning customer service. The addition, then, of CLECs to this arena has moved the market beyond a "one size fits all" customer service environment.

(26) Publicly available data serve to corroborate our findings from interviewing CLECs. For example, in June of 2002, DSL.Net launched a new service, NETLink Virtual Private Network (VPN), that is still being offered today. NETLink is aimed at small to medium sized businesses, and offered secure inter-office communications without the high costs typically associated with comparable products available at that time. NETLink utilizes T-1 and SDSL

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access lines to support multi-location customers, and can be customized to specific customers, without the need for additional Customer Premise Equipment (CPE).[21]

(27) Not only have CLECs introduced new telecommunications services, they have also driven price reductions that have demonstrably helped consumers.[22] Indeed, numerous industry observers have indicated that the presence of CLECs in the marketplace has led to lower prices. For example, a recent study by the Small Business Administration (SBA),[23] found that for businesses responding to the survey,[24] monthly expenditures for DS-1 services were on average $559.61.[25] Expenditures for DS-1 service when that service was provided by an ILEC were higher ($798.80)[26] than when the service was provided by a CLEC ($388.75).27 More generally, the SBA found that, "The main concerns of small business end users, namely price, customer service, and flexibility, are readily addressed by CLEC offerings. In addition, the presence of alternative carriers has placed competitive pressure on ILECs to lower prices and offer increased services." An analysis released by the CompTel/ASCENT Alliance and the PACE Coalition found that America's small businesses saved more than $4 billion in 2003, and could save more than $6 billion in 2004 due to increased competition from CLECs for local and long distance voice services.[28]

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21 "DSL.net Launches New NETLink VPN Service," Press Release, June 20, 2002, http://www.dsl.net/news/pr2002/pr062002.pdf (visited September 16, 2002).

22 While we focus here on specific telecommunications marketplace evidence, more general documentation of the pro-competitive, aggressive pricing behavior of new entrants is well known. Se, e.g., Dakshina G. DeSilva, Timothy Dunne and Georgia Kosmopoulou "An Empirical Analysis of Entrant and Incumbent Bidding in Road Construction Auctions," *Journal of Industrial Economics*, Vol. 41, September 2003, pp. 295-316.

23 Stephen B. Pociask, "A Survey of Small Businesses' Telecommunication Use and Spending," SBA Office of Advocacy, March 2004.

24 There results were based on a mail survey conducted by TeleNomic Research to which 458 small business owners responded, providing information on employment size, industry, use and expenditures for various telecommunications services and other aspects of small business perceptions.

25 Id., Figure 31.

26 Id., Figure 42.

27 Id., Figure 41.

28 "Competition Could Reduce Small Business Phone Bills by $6 Billion," CompTel/Accent Press Release, January 28, 2004.

(28) A number of CLECs indicated that while they themselves may not be offering the lowest prices found in the marketplace, their presence has led to lower prices that benefit consumers. They indicated these are real price reductions that are not driven simply by technology induced cost reductions. For example, one company believed the local ILEC-reduced prices on digital switched services and ISDN PRI services, including free months of service, were a result of its presence and that of another CLEC.[29] Another party observed the Bell companies attempting to offer the same type of bundled services that it does, as well as reducing the prices of its services in response to CLEC entry into a particular area.[30] This CLEC noted that sometimes such Bell responses do not take place until it secures significant (former ILEC) customers, but that in markets in which it has entered recently, the ILEC response was immediate. Several noted aggressive "winback" programs by the Bells that were in direct response to the CLECs' presence. For example, when one CLEC entered the downstream, small and mid-sized business (SMB) market, it generally priced 25 to 30 percent below ILEC prices. BellSouth responded with winback programs discounting its tariffed rates up to 25 percent.[31]

(29) Another CLEC indicated that rates currently available from the Bells to business customers have dramatically fallen for all local exchange services in response to the emergence of some competition. For example, this CLEC reports that rates for ISDN PRI services are one-third of what they were when the CLEC first entered the market, a consideration that was at least partly due to the presence of CLECs.[32]

(30) Yet another CLEC provided a number of examples of price reductions by Qwest in its marketing area that were largely a direct response to its presence and that of other CLECs.[33] **BEGIN PROPRIETARY END PROPRIETARY**

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(31) Another benefit of the CLEC industry is that of redundancy. Thus, in addition to providing greater choice and spurring price and investment competition, CLECs provide redundancy in case of disasters. For example, ITC^DeltaCom noted that its data center maintained service throughout the recent hurricanes in Florida.[34] and NEON Communications helped provide emergency services to lower Manhattan in the aftermath of 9/11.[35]

(32) In addition to the welfare-enhancing effects of the CLECs brought about by the introduction of new services, lower prices and increased consumer choice, there is growing evidence that a vibrant CLEC presence will enhance rather than diminish investment in modern telecommunications infrastructure capable of supporting advanced services. This evidence comes from economic theory and from empirical econometric studies.[36]

(33) Finally, it is worth noting that even the business press has increasingly recognized the importance of a vibrant competitive sector in telecommunications markets. For example, a recent commentary in *Business Week* noted that startups in other countries that have been afforded access to incumbent firm networks have "waged fierce battles against giant rivals, driving prices down and speeds up. 'Competition is the No. 1 (reason) why one country grows faster than another,' says Sam Paltridge, the OECD's telecom analyst...On this score, the U.S. has blown it... The country must create vigorous competition to drive the low prices and high speeds that can usher in a prosperous broadband economy."[37]

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34 "E^delatcom Delivers 100% Up Time Through Tropical Storms Gaston and Fracnes," Press Release, September 10, 2004, http://www.itcdeltacom.com/press/edcWeather%20040910%20-%20FINAL.pdf. (visited September 29, 2004).

35 Vincent Ryan, "Early hopes quickly dashed," *Telephony*, September 24, 2001.

36 For a summary of the theoretical and econometric evidence, see e.g., Direct Testimony of John W. Mayo, submitted for AT&T, in PA PUC, Docket No. I-0030099, at pp. 39-51; See also See also Clarke, Hassett, Ivanova and Kotlikoff, "Assessing the Economic Gains from Telecom Competition," NBER Working Paper Series, May 2004; Phoenix Center, Policy Bulletin No. 4: The Truth about Telecommunications Investment, June 24, 2003; ALTS, The State of Local Competition, (2003), p. 10 and Comptel, Measuring the Economic Impact of the Telecommunications Act of 1996: Telecommunications Capital Expenditures (1996-2001) (October 2002).

37 "Commentary: Behind In Broadband," *Business Week*, August 27, 2004.

IV.2. The vulnerability of the CLECs

(34) In any discussion of the vitality of the CLECs, it is critical that the Commission recognize that this vitality is by no means ensured on a forward-going basis. Indeed, the success of these firms under a policy that has assured unbundled network elements (UNE) availability cannot—as a matter of logic and empirical fact—be taken to be guaranteed, or even likely—in the absence of UNE availability.[38] To do so would be akin to suggesting that a patient taking a ten-day treatment regimen stop taking medication after five days simply because he appears healthy. Indeed, any dispassionate assessment of the CLEC industry makes the vulnerability of this entire competitive fringe abundantly clear. Evidence of the significant difficulties facing the CLEC competitive fringe include a variety of factors such as the high number of bankruptcies and exits that have befallen the CLEC fringe firms, the difficulties these entities face in raising capital, and the current financial position of the CLECs, as revealed through the interview process and publicly available information.

(35) As shown in Table 1, there have been scores of CLEC bankruptcies in recent years.

[38] Indeed, the Commission need only reflect on the marketplace reaction to the recent decisions not to pursue policies designed to provide mass-market switching on an unbundled basis. Specifically, in the wake of those decisions, several market participants announced withdrawals or significant supply reductions from residential local exchange markets (e.g., see "AT&T to Stop Competing in the Residential Local and Long-Distance Market in Several States," Press Release, June 23, 2004). These supply reductions will lead to reduced consumer choices, higher prices, less competitive pressure on the incumbent local exchange providers, and reductions in consumer welfare.

Table 1: CLEC bankruptcies through August 2004[39]

@Link	Fairpoint	NorthPoint Communications
2nd Century	Focal	NX Communications
Actel	FutureOne	Omniplex
Adelphi Business Solutions	General Datacom	Onvoy
Advanced Radio Telecom	Global Crossing	OpTel
American MetroComm	GST	Pathnet
Allegiance	HarvardNet	Picus Communications
Ardent Communications	ICG Communications	Prism Communications
BroadRiver Communications	McLeodUSA	Rhythms NetConnections
Columbia Telecommunications	MetStream	Startec Global Communications
ConnectSouth	Mpower Communications	Teligent
Convergent Communications	Net2000 Communications	UBNetworks
Covad Communications	NETtel	Vectris
CTC	Network Asset Solution	Vitts
Digital Broadband Communications	Network Plus	Williams Communications Group
e.spire Communications	Ntelos	Winstar
ITCDeltaCom	WorldCom	
Jato	XO Communications	
Maverix.net	Yipes	

(36) According to the Association for Local Telecommunications Services (ALTS), of 18 publicly traded CLECs, 15 reported an annual net loss in 2002,[40] and at least 12 reported net losses in

[39] Burton, Kaserman, and Mayo, "Shakeout or Shakedown?," in *Markets, Pricing, and Deregulation of Utilities*, edited by Michael Crew and Joseph Schuh, 2002; ALTS "Progress Report on the CLEC Industry," October 17, 2002, Appendix A; ALTS "The State of Local Competition 2003," April 2003; Smith, Judy, "Atlantic-Acm's Take on Qwest/Allegiance/Level 3 Scenario," Press Release April 2, 2004. http://www.atlantic-acm.com/datalines/d020404.htm (visited on September 20, 2004); McKibben, Paul, "NX Files for Bankruptcy: Move results in layoffs; building costs at source of company's troubles," *Chronicle-Tribune*, April 3, 2004. http://www.chronicle-tribune.com/news/stories/20040403/localnews/201372.html (visited on September 20, 2004); "WorldCom Files for Bankruptcy Court Protection," Press Release, July 21, 2002. http://global.mci.com/news/news2.xml?newsid=3690&mode=long&lang=en&width=530&root=/&langlinks=off (visited on September 28, 2004).

2003.[41] In its 2000 report, ALTS reported there were more than 300 facilities-based CLECs. In 2004, it reported there were 59 independent facilities-based CLECs.[42]

(37) In addition to the high rate of bankruptcies and exits, a number of other indicia indicate the CLEC industry is vulnerable. For example, financial market evaluations, which represent a summary of expectations regarding future profitability, have indicated dismal expectations regarding the CLECs' prospects, with market capitalizations over 95 percent below their height in late 1999. While poor stock performance affected the entire telecommunications industry, the drop for the CLECs has been particularly steep. Thus, as seen in the following graph where the capitalization of the entire CLEC industry reached 24.7 percent of the capitalization of BellSouth, Verizon, and SBC in late 1999, it was barely two percent of the capitalization of those three firms at the end of 2003. Indeed, the worth of the industry relative to the RBOCs is even lower than when the Telecommunications Act was first passed.

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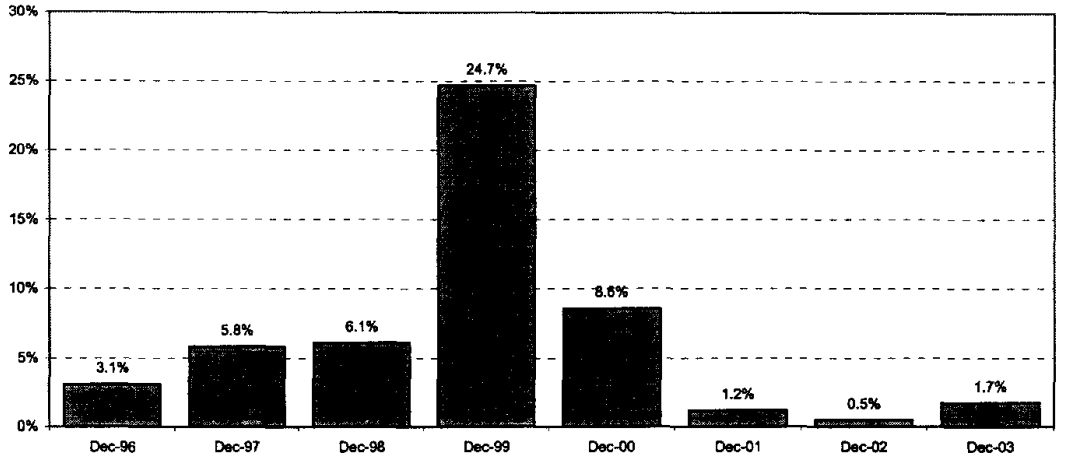
40 See ALTS *Progress Report on the CLEC Industry*, October 17, 2002.

41 These companies include the following: Allegiance Telecom; ChoiceOne; DSL.Net; FiberNet Telecom Group; ICG Communications; ITC DeltaCom; Mpower; McLeod USA; PacWest; US Lec; XO Communications; and Z-Tel. Financial information was retrieved from respective company 2003 10K reports.

42 ALTS, *The State of Local Competition 2004*, July 2004, pp. 19, 20. Facilities-based CLECs are defined as those companies owning and investing in switches, fiber optic cables, wireless antennas, and other new, state-of-the-art infrastructures.

Figure 1: CLEC market capitalization as a percent of capitalization of BellSouth, Verizon, and SBC



Source: ALTS and Bernstein Investment Research and Management.

(38) To the extent there are parties to this matter that have gone bankrupt, most have reorganized. Nevertheless, few of the CLECs we spoke with could be categorized as being financially strong. Most were EBITDA positive, although they had only become positive recently and many are still cash-flow negative. Thus, despite recent improvements, the positions of most CLECs still appears highly vulnerable to regulatory changes that will increase the cost or difficulty of obtaining access to competition-enabling platforms. A number of these firms have explicitly indicated that if they could not obtain UNEs for transport and loops, this would have a significant adverse impact on their business model.[43] It is also important to note that, in the case of bankruptcies, the book value of assets may fall due to the conditions of the reorganization. Thus, the increased solvency of many of the CLECs may not reflect fundamental improvements in future prospects. Yet another indication of the vulnerability of the CLEC fringe is the current regulatory uncertainty that

[43] Discussion with **BEGIN PROPRIETARY END PROPRIETARY**

it faces regarding network access and the negative consequences this uncertainty creates for raising necessary capital in financial markets.[44]

(39) Further, in the interview process, many CLECs indicated they had difficulties obtaining financing through the capital markets. This was due to both their own precarious financial conditions and current uncertainties regarding the viability of the CLEC industry as a whole, including the nature of the regulatory environment.[45] Security filings also indicate that for a number of CLECs, debt loads are high and this limits their ability to obtaining financing. In its 2003 10K report, McLeodUSA, Inc. reported net losses every year since operations began in 1992. The company acknowledged that, "if we do not become profitable in the future, we could have difficulty obtaining funds to continue our operations."[46] In its 2003 10K report, Choice One Communications notes, "We may not have the ability to develop strategic alliances, make investments, or acquire assets necessary to complement our existing business."[47] Several other CLECs have also indicated serious questions exist regarding their ability to raise capital in their SEC filings.[48] Moreover, a number of venture capitalists have submitted affidavits in various proceedings indicating that the loss of UNEs would make it unlikely CLECs could attract any capital.[49]

(40) Yet another indication of the vulnerability of the CLECs is the publicly available information on these companies' credit ratings. These ratings represent the credit rating agency's assessment of the debt-holder's risk of receiving principal and interest from the firm issuing the debt. The lower the rating, the higher the probability of default on interest payments and principal repayment, and the higher the probability of bankruptcy. Out of nine firms identified as CLECs whose debt was rated, eight had debt that rated below "investment grade" (i.e., junk).

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44 Discussion with **BEGIN PROPRIETARY END PROPRIETARY**

45 Interview with **BEGIN PROPRIETARY END PROPRIETARY**

46 McLeodUSA, Inc. 2003 10K Report, page 21.

47 Choice One 2003 10K Report, page 19.

48 FiberNet Telecom 2003 10K Report; DSL Net Inc 2003 10K Report.

49 E.g., see the declarations of John Hunt, James N. Perry, Jr., and Peter H.O. Claudy in Support of the Reply Comments of the Competitive Telecommunications Association.

Table 2: CLEC Standard & Poor's Credit Ratings

AT&T Corp.	BB+/Negative/B	08/03/04	Below	Provide uncertain protection against losses from credit defaults
Central Telecommunications	ruBB+/--/--	04/05/03	Below	Provide uncertain protection against losses from credit defaults
D&E Communications	BB-/Negative/--	02/03/04	Below	Provide uncertain protection against losses from credit defaults
Eschelon	CCC+/Developing	02/26/04	Below	Extremely vulnerable to losses from credit defaults
Grande Communications	CCC+/Developing/--	02/24/04	Below	Extremely vulnerable to losses from credit defaults
ITC Holding Company	BBB/Negative	07/02/03	Above	Provide adequate protection against losses from credit defaults
MCI Communications Corp.	NR/--/NR	12/31/02	Below	MCI emerged from bankruptcy in April 2004, and is currently not rated by S&P, which mean it is below investment grade
United GlobalCom, Inc	B/Stable/--	03/03/04	Below	Exhibit vulnerability to losses from credit defaults
US Lec	B-/Negative	09/15/04	Below	Exhibit vulnerability to losses from credit defaults

Source: Standard & Poor's website[50]

(41) In addition to suggesting a high probability of bankruptcy, low debt ratings increase the yield on debt, which means the cost of debt capital for the firm is higher. Low rated debt also suggests that the firm is likely to face difficulties in raising new capital (i.e., public debt, bank debt, or equity).

[50] The CLECs shown above include companies identified as CLECs by Standard & Poor's, and those listed in ALTS, *The State of Local Competition 2004*, July 2004, pp. 19-21. Only companies with a publicly listed S&P rating after January 1, 2003 were included. Citizen's Communications was dropped because this company is primarily an ILEC. We also dropped Otter Tail, Inc., because this company is primarily a utility company.

V. THE IMPAIRMENT STANDARD

V.1. The impairment issue: the context

(42) The technical and legal dimensions of the issue of "impairment" have certainly proven to be contentious to this point, and now the USTA II decision has once again dictated an additional detailed refinement.[51] In doing so, it is critical that the Commission not lose sight of the overarching fact that the Telecommunications Act imposes a fundamental change in the responsibilities of the Commission. In particular, the history of regulation has traditionally been one of *protection*: protection of the monopoly from competitors, and protection of consumers from the monopolist. The fundamental change embodied in the Telecommunications Act of 1996 is that, rather than maintaining a policy of protecting consumers by preventing incumbent monopolists from exercising their monopoly power, the Act embraces a policy of *enabling competition*. The Act's approach requires a more affirmative set of actions than any regulatory paradigm employed in the past. Not merely is competition to be permitted, or tolerated, or even accommodated—instead, the Commission is now directed to seek ways to enable competition affirmatively.

(43) In fact, in its 2002 *Verizon* decision, the Supreme Court was quite clear regarding the Congressional intent behind the Act.[52] The Court noted that Congress sought "*an entirely new objective of uprooting monopolies*" and that the policy charge was "*to reorganize markets by rendering regulated utilities' monopolies vulnerable to interlopers.*"[53] Thus, in light of the Supreme Court's judgment, there can be no doubt that the Commission's prime directive is to cast off the anachronistic tendency to protect the incumbent utilities from competition and, instead, to undertake policies that enable competition (i.e., the competitive process itself) to become effective.[54] Indeed, the Court went so far as to note that "the Act appears to be an explicit

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51 For a review, see TRO, ¶¶15-30 and USTA II at pp. 13-15.

52 Verizon Communications, Inc. v. FCC, 535 U.S. 467 (2002) ("Verizon").

53 Verizon, 535 U.S. at pp. 488-489. (Emphasis added.)

54 The laudable goal of promoting competition through competition-enabling policies is distinct from misguided policies that protect individual competitors. Economists widely endorse the former, buttressed by the passage of the Telecommunications Act, while economists and antitrust scholars routinely denounce the latter.

disavowal of the familiar public-utility model...in favor of novel rate setting designed to give aspiring competitors every possible incentive to enter local retail telephone markets, short of confiscating the incumbents' property."[55] The lesson from the Supreme Court is that as the Commission seeks to craft economically sound and legal standards and tests, it must do so in a fashion that is truly competition enabling.[56]

(44) It is also important to note that much of the competition that exists today has developed in an environment in which access to unbundled network elements has been available. It would be a logical mistake to point to the development of this competition predicated on the availability of UNEs as evidence that UNEs are no longer necessary. Likewise, it is also true that the development of pockets of competition is not evidence that additional steps might not need to be taken to further enable competition in other areas or market niches.

V.2. The impairment issue: the specifics

(45) The issue of impairment emanates from section 252(d)(2) of the Act that states that "[in] determining what network elements should be made available ...the Commission shall consider at a minimum, whether—(A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer." In its interpretation of this statutory language, the Commission has stated that, "A requesting carrier is impaired when lack of access to an incumbent LEC network element poses a barrier or barriers to entry, including operational and economic barriers, that are likely to make entry into a market uneconomic." (*TRO*, ¶ 7)

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55 Verizon, 535 U.S. at p. 489.

56 For a more detailed discussion of this "meta-message" from the Supreme Court Opinion, see David L. Kaserman and John W. Mayo, "The Supreme Court Weighs in on Local Exchange Competition: The Meta-Message," *Review of Network Economics*, September 2002, pp. 119-131. Also found at http://www.rnejournal.com/articles/kaserman_sept02.pdf.

(46) The Commission's analysis in the TRO delineated several factors that need to be assessed in determining whether CLECs would be impaired in the provision of telecommunications services without access to UNEs.[57] Those factors include:

- **Scale Economies.** Economies of scale exist in markets in which long run average cost decreases as output expands. If entrants acquire fewer customers and sell less output than the incumbent, the resulting higher average cost makes it difficult for the entrants to compete with the incumbent, particularly if retail prices are close to the incumbent's average cost. Scale economies, particularly when combined with sunk costs and first-mover advantages, discussed below, can pose a powerful barrier to entry. The Commission noted, however, that scale economies that pertain just to the beginning stages of entry might not be relevant in an unbundling analysis, so long as the entrant would be able eventually to achieve a minimum viable scale that would allow it to overcome these initial diseconomies. For loops and transport, there are significant scale economies persisting over a significant range of output and relating to the cost of constructing fiber optic plants, as well as in the electronics used to light fiber and convert electronic to photonic signals and to cross-connect circuits.

- **Sunk Costs.** Sunk costs are those costs that are unrecoverable upon exit from the market. High sunk costs increase the cost of failure to an entrant. Thus, if there is a substantial risk that entry will not be successful for various reasons, including uncertainty concerning demand for the firm's product and the firm's operational ability to enter the market and achieve profitability, then the presence of large sunk costs could raise the cost of failure and exit sufficiently to deter entry. This increased risk could also be reflected in a higher cost of capital to entrants, thus further discouraging entry into industries that are inherently risky.[58] Potential new entrants may also fear that an incumbent LEC that has incurred substantial sunk costs will drop prices to protect its investment in the face of new entry. There are significant sunk costs associated with construction of fiber loops or transport facilities to

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[57] See TRO at ¶¶85-91.

[58] Indeed, as seen in Section IV.2 supra, the prolific number of bankruptcies that have occurred among CLECs that have made sunk cost expenditures has clearly compounded the extant barriers to entry caused by sunk costs in this arena.

specific locations, including costs of intra-building ducting and cabling. Sunk costs are also substantial for collocation facilities—including those associated with the set-up charges imposed by the ILECs and the costs to the CLECs of equipping the collocation facility. Non-recurring fees imposed by the ILECs for a number of services, including cross-connections at the collocation space, also constitute significant sunk costs for the CLECs.

- **First-Mover Advantages.** When a firm is able to gain an advantage in the marketplace as a result of entering the market first, it is said to have a first-mover advantage. There are a number of sources of first-mover advantages, such as advertising and gaining brand name preference, patents, sunk costs, and rights-of-way. First-mover advantages often create an absolute cost disadvantage for new entrants, which if large enough, can be a barrier to entry. First-mover advantages can also contribute to the effects of economies of scale and high sunk costs. The first-mover advantages to the ILECs in the markets for loop and transport include: ease of access to rights of way, ease of access to buildings and intra-building cabling, and reputation secured during a period of monopoly incumbency.

- **Absolute Cost Advantages.** An incumbent has an absolute cost advantage if, for any given level of output, the incumbents' per unit costs are lower than for an entrant.[59] Possible sources of absolute cost advantages include privileged access to resources, control of a better technology or more efficient means of production which cannot be duplicated by the entrant, limitations in the availability of productive factors, the learning curve, and a lower cost of capital. Absolute cost advantages, if of sufficient size, can deter entry or make it impossible for entrants to provide service in an economic fashion. One example of an absolute cost advantage is the free (or low priced) access that the ILEC enjoys to its rights of way.

- **Barriers Within the Control of the Incumbent LEC.** Strategic behavior by an incumbent can prevent entry from occurring. For example, under certain circumstances, an incumbent could deter entry if it invested in additional capacity today, such that it would be likely to lower prices when entry occurs, creating losses for everyone. Such behavior is rational only if the incumbent expects that an entrant is likely to be deterred from entry as a result. Another

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[59] This differs from the scale economies discussed above, in that each carrier is producing at the same level of output, while scale economies exist because one carrier produces a higher volume.

strategic behavior is product differentiation, which refers to a firm's attempt to distinguish its products from other firms' products and gain the ability to raise the price through advertising, the development of a brand name and product image, varying the product characteristics and quality, and selling in different locations. When faced with prospective entry, an incumbent monopolist can also deter entry by inducing its customers to sign long-term or high-volume contracts, with substantial penalties for breaching the contract. These contracts can act as a barrier to entry, if they prevent customers from switching to an entrant. A primary source of the barriers within the control of the ILEC is where the CLEC must obtain loops from the ILEC and cross-connect those loops to its own transport facilities. The CLECs are dependent upon the ILEC for timely and efficient provisioning of the loop facilities.[60]

(47) The critical concept of course, in this debate, is how the Commission shall define the concept of "impairment." If impairment is defined "too leniently," then the CLECs will have access to ILEC facilities where they could more economically build their own facilities; too harshly, and the CLECs will be unable to compete where they should be able to do so. In this regard, the Commission has found it necessary to refine its impairment standard several times in response to various criticisms offered by the courts. Even with these refinements that were most recently embodied in the TRO, the Commission's impairment standard has still be subjected to criticism from the court for being too "open-ended." For example, the court stated that the Commission's definition of impairment is "vague almost to the point of being empty" because it does not specify the required level of efficiency of the CLEC who is impaired. Specifically, the Commission's phrase "...operational and economic barriers, *that are likely to make entry into a market uneconomic"* raises the question in the court's mind "uneconomic by whom?" That is, does the uneconomic entry standard apply to an efficient CLEC, or to any CLEC no matter how inefficient).[61]

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60 The incentive and ability of a vertically integrated provider to "sabotage" its rivals through such non-price mechanisms is well known. See, e.g., T. Randolph Beard, David L. Kaserman and John W. Mayo "Regulation, Vertical Integration and Sabotage," *Journal of Industrial Economics*, Volume 49, September 2001, pp. 319-334.

61 USTA II at p. 24.

(48) Additionally, in the context of a discussion of wireless carriers' access to unbundled dedicated transport, the USTA II court raised what might be seen as a paradox. Specifically, the court recognized that given "the ILEC's incentive to set the tariff price as high as possible," the ILECs might seek to use the offering of special access as justification for circumventing the unbundling (and pricing) requirements of the Act. But the court also observed that, at least in the case of wireless carriers, the use of dedicated transport circuits at special access (rather than UNE) rates did not appear to be harming competition.[62] Consequently, the court found that a "blanket rule" that treats special access as irrelevant to be too stringent. In particular, the court observed that if, as in the case of wireless carriers' access to dedicated special transport circuits, competition using special access is "flourishing," it is "hard to see any need for the Commission to impose the costs of mandatory unbundling."[63]

(49) While the court's actions may seem to create considerable uncertainty and create a propensity to "go back to the drawing board," our review indicates that rather small, but entirely logical refinements in the concept of "impairment" can simultaneously address the court's criticism of the earlier impairment standard and advance the cause of advancing the pro-competitive goals of the Telecommunications Act.

(50) Specifically, we propose a refinement to the impairment standard that eliminates the "open-ended" criticism of the USTA II court and much more clearly focuses the standard on an investigation of the "structural impediments to competition" that the court highlights in its opinion.[64] Additionally, the refined impairment standard removes the "special access paradox" that the USTA II court identified. It does so by drawing upon the extant body of language, methods, and tools from the competition policy (antitrust) arena. In particular, we proffer a specific refinement to the impairment standard that retains the key features of the impairment standard that the court found to be "an improvement" but also refine the

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62 The court's focus on the *harm to competition* emanates from the observation that the purpose of the Act is "to stimulate competition." As seen infra, our proposed refinement to the impairment standard adheres closely to this interpretation of the Act.

63 USTA II at p. 16.

64 USTA II at p. 24.

concept further by adoption of language parallel to that utilized in mainstream antitrust. The result is that the "open-ended' criticism is squarely put to rest and other issues raised by the court markedly recede. Furthermore, we show that the Telecommunications Act's *competitor impairment concern is equivalent to competition policy's concerns for the* competitive health and performance of a market. Thus, consideration of the competition policy-based standard reinforces the competitor impairment principles already developed by the Commission.

V.3. The impairment standard

(51) To implement the above concepts, we propose the following impairment standard:

> **Requesting carriers are impaired in their ability to provide the services they seek to offer if the consequence of failure to provide the requested network element poses a barrier or barriers to entry, including operational and economic barriers, and where the effect may be substantially to lessen competition, or to tend to create a monopoly in the provision of the retail services that utilize the requested element.**

(52) This standard appropriately retains from the TRO the focus on the presence and degree of economic and operational barriers to entry. But rather than focusing the standard on whether the impact of those barriers is to make entry "uneconomic" (which the court found "too open ended"), the impairment standard now links the presence of such barriers to their prospect for lessening competition. Unlike the open-ended nature of the "uneconomic entry" language, the lessening of competition standard brings with it both a set of discerning economic tools and rich case law from the antitrust economics and law arena. For instance, the antitrust enforcement officials, and courts have been able to successfully determine when mergers, exclusive dealing or price discrimination has created (or not) the prospect of lessened competition in markets since the passage of the Clayton Act of 1914. Marketplace characteristics, including the present market structure of the properly defined